

Remarks

[0003] Applicant respectfully requests reconsideration and allowance of all of the claims of the application. Claims 1, 3-8, 10-16, and 18-23 are presently pending. Claim amended herein is 8. Claims withdrawn or cancelled herein are none. New claims added herein are none.

Summary of Interview

[0004] Examiner NGUYEN graciously talked with me—the undersigned Attorney for the Applicant—on Apr 2, 2007. Applicant greatly appreciates the Examiner’s willingness to talk. Such willingness is invaluable to both of us in our common goal of an expedited prosecution of this patent application.

[0005] During the conversation, the Examiner and I discussed 1) how to overcome the § 101 rejections; and 2) differences between the cited art and the claims. The Examiner the Examiner was reluctant to address several differences between the claims and the cited references that the Applicant noted. Therefore, this response focuses those differences. In addition, as per the Examiner’s request, this response elaborates on terminology, namely, “executable image” and “extensible” database.

Formal Request for an Interview

[0006] If the Office’s reply to this communication is anything other than allowance of all pending claims, then I formally request an interview with the Examiner. I encourage the Examiner to call me—the undersigned Agent for the

Applicant—so that we can talk about this matter so as to resolve any outstanding issue quickly and efficiently over the phone.

[0007] Otherwise, please contact me or my assistant to schedule a date and time for a telephone interview that is most convenient for both of us. While email works great for us, I welcome your call to either of us as well. Our contact information may be found on the last page of this response.

Terminology

[0008] In the telephone interview, the Examiner asked for the Applicant to elaborate on specific terminology, namely, “executable image” and “extensible” database. This is that elaboration.

Executable Image

[0009] Not counting the claims, drawings, or abstract, the term “executable image” is used about 32 times in the specification. For example, the first paragraph of the background section addresses this terminology. For the reader’s convenience that paragraph is reproduced here:

One of the functions of an operating system ("OS") is the load and run executable “images.” These “images” are typically stored files that are designed to be loaded into the memory of a computer. When control of the processor is passed to an “image” in memory, it executes (or “runs”) that image. [Executable images] may be, for example, applications, programs, program modules, program libraries, and the like. A reference herein to loading files expressly refers to loading stored executable images.

[0010] Furthermore, there is much discussion the specification about formats of executable images. Further still, as noted in the 3rd full paragraph on

the first page of the Background section, the “loader” which is the subject of the application is an “executable-image loader.”

Extensible Database

[0011] Not counting the claims, drawings, or abstract, the term “extensible” is used about 50 times in the specification. This includes its use in the title: “Extensible Loader.” In the discussion of Fig. 4 (pp. 17-18), the loader accesses a database to identify the format of an executable image.

[0012] Furthermore, as originally filed, claim 2 disclosed the extensibility of the database. The content of claim 2 is now largely incorporated into claim 1. As originally filed, claim 2 reads:

2. A medium as recited in claim **Error! Reference source not found.**, wherein the database is extensible so that additional file format definitions may be added to the database of multiple file format definitions

Specification Amendment

[0013] Herein, Applicant amends the first paragraph on page 18 so that it discusses the extensibility of the configuration database. Since this change is fully supported by the text of the originally filed claim 2 (quoted above), this change is not new matter.

Claim Amendment

[0014] Herein, Applicant amends claim 8 merely to correct a grammatical omission of a term.

Substantive Matters

Claim Rejections under § 101

[0015] The Office states the following (Action, p. 2):

Regarding claims 1, 3-8, 10-15 and 19-23, a computer-readable medium carrying one or more sequences of instructions for executing transactions is recited in the claim. "Computer-readable medium" as defined in the specification (0138, 0140, 0141) communication media includes wired media such as a wired network or direct wired connection and wireless media such as acoustic, RF, infrared and other wireless media. A signal encoded with functional descriptive material does not fall within any of the categories of patentable subject matter. Therefore, claims 13-25 are not statutory (As set forth in § 101, a claimed signal is clearly not a process under § 101 because it is not a series of steps. A claimed signal has no physical structure, does not itself perform any useful, concrete and tangible result, and does not fit within the definition of a machine. A claimed signal is not matter, but a form or energy, and therefore is not a composition of matter or product).

[0016] In response, Applicant amends the specification herein so as to exclude the categories (e.g., signals) that the USPTO considers to be non-patentable subject matter. Applicant submits that with this amendment to the specification, the reasoning for the § 101 rejection provided on p. 2 of the Action is no longer applicable.

[0017] In light of the amendment herein, Applicant respectfully submits that these claims comply with the patentability requirements of § 101 and that the § 101 rejections should be withdrawn. The Applicant further asserts that

these claims are allowable. Accordingly, Applicant asks the Examiner to withdraw these rejections.

[0018] If the Office maintains its rejection of these claims, then the Applicant requests some additional guidance as to what is necessary to overcome the rejection.

Claim Rejections under §§ 102 and 103

[0019] The Office rejects all pending claims under §102 and/or §103. For the reasons set forth below, the Office has not shown that cited references anticipate (under §102) the rejected claims. For the reasons set forth below, the Office has not shown made a prima facie case showing that the rejected claims are obvious (under §103). Accordingly, Applicant respectfully requests that the rejections be withdrawn and the case be passed along to issuance.

[0020] The Office's rejections are based upon the following references:

- **Price:** *Greg Price*, U.S. Patent No. 6,738,932 (issued 5/18/2004);
- **Bodrov:** *Bodrov*, U.S. Patent No. 6,802,006 (issued 10/5/2004).

Overview of the Application

[0021] For various reasons (e.g., promotion of backward compatibility or cross-platform compatibility), it is desirable for an operating system (OS) to load and execute otherwise non-native executable images. Such images have an otherwise unsupported format. The conventional approach is to modify the native loader (of the native OS) so that the native loader will recognize the

otherwise unsupported format of an image and load it. Because of these modifications, a loader of such an OS is littered with hard code designed to identify, locate, map, and search out various formats of non-native images.

[0022] Also, it may be desirable for an OS to support the execution of images from multiple platforms by using a simulator/emulator. It might be impractical to know before shipping the OS what type of application that a user might simulate/emulate. With an exemplary extensible loader described in the Application, one can install a customized loader to extend OS features on the fly (i.e., without extensive loader redesign by a high level programming team—like that of the OS manufacturer).

Cited References

[0023] The Office cites Price as its primary reference in its obviousness-based rejections. The Office cites Bodrov as its secondary reference in its obviousness-based rejections.

Price

[0024] Price describes a method for identifying software executing on a computer system from a memory image defining at a particular time a state of the executing software. The method includes populating a comparison file for the computer system with **signatures of executable software**. The executable signatures correspond to pre-selected executables that can be run on the computer system, such as kernel software, and include version identifying

information. Executables are located in the received memory image and are then processed to generate comparison information. The comparison information is compared to the version identifying information to **identify software** itself and not the formats of such software.

Bodrov

[0025] Bodrov describes a system and method for verifying the authenticity of executable images. The system includes a validator that determines the reference digital signature for an executable image using the contents of the executable image excluding those portions of the executable image that are fixed up by a program loader. The validator then subsequent to the loading of the executable image determines an authenticity digital signature to verify that the executable image has not been improperly modified. In addition, the validator ensures that each of the pointers in the executable image has not been improperly redirected.

Anticipation Rejections

[0026] Applicant submits that the anticipation rejections are not valid because, for each rejected claim, no single reference discloses each and every element of that rejected claim.¹ Furthermore, the elements disclosed in the single reference are not arranged in the manner recited by the each rejected claim.²

Based upon Price

[0027] The Office rejects claims 16 and 18-23 under USC § 102(e) as being anticipated by Price. Applicant respectfully traverses the rejections of these claims. Based on the reasons given below, Applicant asks the Office to withdraw its rejection of these claims.

¹ "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); also see MPEP §2131.

² See *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Independent Claim 16

[0028] The Office indicates (Action, p. 3) the following with regard to this claim:

Regarding claims 16, 19 and 20, all the limitations of these claims have been noted in the rejection of claim 1. Price discloses: a method, a computer-readable medium having computer executable instructions that when executed by a computer for facilitating loading to one or more executable images a varying formats, the method comprising: locating an executable image on a computer media (col. 6, lines 58-59, Price);

investigating information related to the executable image, thereby identifying the format of the executable image, wherein during the investigating an extensible database of executable-image formats is accessed (matching and verification process in fig. 4 and col. 9, line 1 to col. 10, lines 11, Price).

based upon the identified format of the image, initiating a loader associated with the identified format (col. 6, lines 66 to col. 7, lines 57, Price); with that loader, loading the executable image into a computer memory (col. 6, lines 58-59, Price).

[0029] Applicant submits that Price does not anticipate this claim because Price does not disclose the following as recited in this claim (with emphasis added):

- investigating information related to the executable image, thereby ***identifying the format of the executable image***, wherein during the investigating, ***an extensible database of executable-image formats is accessed***;
- ***based upon the identified format of the image***, initiating a loader associated with that identified format;

[0030] Instead of identifying the “formats of the executable image” (as recited by the claim), Price identifies a particular executable image based upon the “signature” of the particular executable image. The Price discloses identifying particular executable images and not on “identifying the format of the executable image,” as recited by the claim.

[0031] Moreover, instead of taking an action “based upon the identified format of the image” (as recited by the claim), Price takes action based upon determining Price whether an image’s “signature” in a database of “signatures” and if it is, then determining whether the size of the executable image matches the size associated with the matched signature. The actions of Price are triggered based upon matching particular executable image with a database entry for a particular image; rather than “based upon the [identification of a] format of the image” (as recited by the claim).

[0032] Furthermore, instead of a database of “executable-image formats” (as recited by the claim), Price’s database is one that includes “signatures” and associated sizes. Price’s database is not one of “executable-image formats.”

[0033] Further still, nothing in Price indicates that its database is “extensible.”

[0034] Consequently, Price does not disclose all of the claimed elements and features of this claim. Accordingly, Applicant asks the Office to withdraw its rejection of this claim.

Dependent Claims 18-20

[0035] These claims ultimately depend upon independent claim 16. As discussed above, claim 16 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable reasons that are independent to the reasons for the allowability of their base claim.

Independent Claim 21

[0036] The Office indicates (Action, p. 4) the following with regard to this claim:

Regarding claims 21 and 23, Price discloses: a computer-readable medium having modularized computer-executable modularized sets of instructions and an operating system comprising a medium that, when executed by the computer perform a method comprising: loading one or more executable images into a computer memory (col. 6, lines 58-59, Price), such an image having one or more formats defined by an extensible database of executable image formats (col. 7, lines 40-46, Price); executing the one or more executable images that are loaded into the computer memory (col. 5, lines 38-55, and matching and verification process in fig. 4 and col. 9, line 1 to col. 10, lines 11, Price)

[0037] Applicant submits that Smith does not anticipate this claim because Price does not disclose the following as recited in this claim (with emphasis added):

- loading one or more executable images into a computer memory, such an image having one or more formats defined **by an extensible database of executable-image formats**
- executing the one or more executable images that are loaded into the computer memory

[0038] Instead of a database of “executable-image formats” (as recited by the claim), Price’s database is one that includes “signatures” of particular executable images and their associated sizes. Price’s database is not one of “executable-image formats.”

[0039] Furthermore, nothing in Price indicates that its database is “extensible.”

[0040] Consequently, Price does not disclose all of the claimed elements and features of this claim. Accordingly, Applicant asks the Office to withdraw its rejection of this claim.

Dependent Claims 22-23

[0041] These claims ultimately depend upon independent claim 21. As discussed above, claim 21 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally,

some or all of these claims may also be allowable reasons that are independent to the reasons for the allowability of their base claim.

Obviousness Rejections

Lack of *Prima Facie* Case of Obviousness (MPEP § 2142)

[0042] Applicant disagrees with the Office's obviousness rejections. Arguments presented herein point to various aspects of the record to demonstrate that all of the criteria set forth for making a prima facie case have not been met.

Based upon Bodrov and Price

[0043] The Office rejects claims 1, 3-8, and 10-15 under USC § 103(a) as being unpatentable over **Bodrov** in view of **Price**. Applicant respectfully traverses the rejections of these claims. Applicant asks the Office to withdraw its rejection of these claims.

Independent Claim 1

[0044] Applicant respectfully submits that Bodrov and Price, either alone or in combination, fail to disclose (from clam 1 with emphasis added):

a file-format recognizer configured to **recognize the file format of the executable image** from amongst a **database of multiple file format definitions**, wherein the **database is**

extensible so that additional file format definitions may be added to the database of multiple file format definitions.

[0045] The Office acknowledges that Bodrov does not disclose “a database of multiple file format definitions.” (Action, pp. 4-5). However, the Office indicates that Price does disclose this. (Action, p. 5).

[0046] Applicant respectfully disagrees. From the Applicant’s reading of Price, it does not appear that Price discloses an extensible database of multiple file format definitions as recited in claim 1. Rather, it appears that Price describes identifying executables themselves using a database of “signatures.” While Price does mention the words “formats” and “database,” its database is not one of multiple file format definitions of executable images (which are what the claims are directed towards).

[0047] For example, Price says, “In one preferred embodiment of step 310, identifying executable files to be included in the kernel 130 is stressed. In this embodiment, file identification involves *identifying the different file formats used to distribute kernel software in the computer system* 110” col. 5, lines 56-60 (emphasis added). Here, Price says nothing about different formats of executable images. Rather, it says, “...different file formats used to distribute kernel software...”

[0048] For example, Price says, “While **the executable signatures ... may be stored in numerous file formats** to practice the invention, one preferred storage arrangement is as records and files in a database” col. 7, lines 40-46 (emphasis added). Here, Price says nothing about different formats of executable

images. Rather, it says the “executable signatures” may be stored in “numerous file format.” Price notes that the signatures of particular executable images may be stored in numerous file formats. It says nothing about formats of the executable images themselves.

[0049] Furthermore, the Office has not identified, with a particularity, where either Bodrov or Price discloses anything about a database being “**extensible**” so that additional file format definitions may be added to the database of multiple file format definitions.” If either reference discloses this, please help me identify where.

[0050] Accordingly, for the reasons stated above, this claim is allowable over Bodrov in view of Price, and Applicant respectfully requests that this rejection be withdrawn.

Dependent Claims 3-7

[0051] These claims ultimately depend upon independent claim 1. As discussed above, claim 1 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable reasons that are independent to the reasons for the allowability of their base claim.

Independent Claim 8

[0052] Applicant respectfully submits that Bodrov and Price, either alone or in combination, fail to disclose (from claim 1 and emphasis added):

a **database of multiple executable-image formats** which is the basis for which the recognizer recognizes the format of executable image and for which the memory-mapper varies how it loads and maps the executable image into memory, wherein the **database is extensible** so that additional executable-image formats may be recognized by the recognizer and loaded and mapped by the memory-mapper.

[0053] Applicant submits that Price does not appear to disclose an “[extensible] database of multiple executable-image formats” (as recited in this claim). Rather, it appears that Price describes identifying executables themselves using a database of “signatures.” While Price does mention the words “formats” and “database,” its database is not one of multiple file format definitions of executable images (which are what the claims are directed towards).

[0054] For example, Price says, “In one preferred embodiment of step 310, identifying executable files to be included in the kernel 130 is stressed. In this embodiment, file identification involves *identifying the different file formats used to distribute kernel software in the computer system* 110” col. 5, lines 56-60 (emphasis added). Here, Price says nothing about different formats of executable images. Rather, it says, “...different file formats used to distribute kernel software....”

[0055] For example, Price says, “While **the executable signatures ... may be stored in numerous file formats** to practice the invention, one preferred storage arrangement is as records and files in a database” col. 7, lines 40-46 (emphasis added). Here, Price says nothing about different formats of executable images. Rather, it says the “executable signatures” may be stored in “numerous file format.” Price notes that the signatures of particular executable images may be

stored in numerous file formats. It says nothing about formats of the executable images themselves.

[0056] Furthermore, the Office has not identified, with a particularity, where either Boron or Price discloses anything about a database being “**extensible** so that additional executable-image formats may be recognized by the recognizer and loaded and mapped by the memory-mapper.” If either reference discloses this, please help me identify where.

[0057] Accordingly, for the reasons stated above, this claim is allowable over Bodrov in view of Price, and Applicant respectfully requests that this rejection be withdrawn.

Dependent Claims 10-15

[0058] These claims ultimately depend upon independent claim 8. As discussed above, claim 8 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable reasons that are independent to the reasons for the allowability of their base claim.

Dependent Claims

[0059] In addition to its own merits, each dependent claim is allowable for the same reasons that its base claim is allowable. Applicant submits that the Examiner withdraw the rejection of each dependent claim where its base claim is allowable.

Conclusion

[0060] All pending claims are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the application. If any issues remain that prevent issuance of this application, the **Examiner is urged to contact me before issuing a subsequent Action.** Please call/email me or my assistant at your convenience.

Respectfully Submitted,

Dated: __April 30, 2007__

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